

WHAT IS CLAIMED IS:

1. A LVTSCR-like ESD protection structure, wherein the structure displays a two-stage snapback triggering characteristic.
- 5 2. A structure of claim 1, wherein the physical properties of the structure are designed to achieve a reduction in the carrier injection from the p+ emitter region.
3. A structure of claim 2, wherein the locations of the p+ emitter and n+ drain regions of the structure are reversed.
- 10 4. A structure of claim 2, wherein the emitter is located outside the drain region of the structure so that at least part of the drain contact region lies between the gate and emitter region.
- Subj 11 5. A structure of claim 4, wherein the n+ drain region is split into at least one first drain region located near the gate, and at least one second drain region.
- 15 Subj 12 6. A structure of claim 5, wherein the at least one first drain region comprises a floating n+ region, and the at least one second drain region comprises a n+ contact region.
- 20 7. A structure of claim 4, wherein the structure includes multiple emitters outside at least part of the n+ drain region.
8. A method of reducing local heating in a LVTSCR-like structure, comprising splitting the n+ drain region into at least one first drain region located near the gate, and at least one second drain region, wherein at least part of the n+ drain region is formed between the p+ emitter and the gate of the structure.
- 25 9. A method of claim 8, wherein the at least one first drain region comprises a floating n+ region, and the at least one second drain region comprises a n+ contact region.
10. A method of claim 8, wherein the p+ emitter comprises a plurality of emitter regions.
- Subj 11 11. A high holding voltage LVTSCR-like structure, comprising an emitter located so that at least part of the drain region is located between the gate and emitter region.
12. A structure of claim 11, wherein the n+ drain region is split into at least one first drain region located near the gate, and at least one second drain region.
13. A structure of claim 12, wherein the at least one first drain region comprises a floating n+ region, and the at least one second drain region comprises a n+ contact region.
- 30 Subj 14 14. A structure of claim 11, wherein the emitter comprises a plurality of emitter regions.
15. A structure of claim 12, wherein the emitter comprises a plurality of emitter regions.
- Subj 16 16. A structure of claim 12 wherein the first and second drain regions are separated by a shallow trench isolation region.

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